



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/528,019

03/16/2005

Tadayoshi Ito

038440-0120

9311

22428 7590 07/06/2007
FOLEY AND LARDNER LLP
SUITE 500
3000 K STREET NW
WASHINGTON, DC 20007

EXAMINER

HERRERA, DIEGO D

ART UNIT

PAPER NUMBER

2617

MAIL DATE

DELIVERY MODE

07/06/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|-------------------------------|--------------------------------|--|
| Office Action Summary | Application No. 10/528,019 | Applicant(s) ITO, TADAYOSHI | |
| | Examiner Diego Herrera | Art Unit 2617 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 11-15 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The preamble for a computer readable medium and executable program are not statutory, but to further prosecution will be considered by examiner statutory.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Art Unit: 2617

Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doi (US publication 20020039886 A1), and in view of Ishida (US publication 20010019952 A1).

Regarding claims 1, 11, and 14. Doi discloses a radio cell station apparatus in a mobile communication system (paragraph [0003], Doi teaches communication device and radio communication system made up of base station and mobile terminal), signals received in said mobile communication system including already-known reference signals (abstract, title, fig. 5, paragraph [0032], Doi teaches the reference signal), comprising:

search means (40) for searching for a reference signal already used in a neighboring cell station (paragraph [0058], Doi teaches the reference signal already used);

storage means (70) for storing the reference signal detected by said search means (40) (paragraph [0056], [0058], Doi teaches the storing reference signal); and

However, Doi does not disclose specifically reference signal allocation means (40) for allocating, when a connection request is received from a terminal device, a reference signal different from the reference signal stored in said storage means (70), nevertheless, Ishida teaches the limitations (paragraph [0086]-[0087], Ishida teaches storing information).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to specifically include reference signal allocation

Art Unit: 2617

means (40) for allocating, when a connection request is received from a terminal device, a reference signal different from the reference signal stored in said storage means (70), as taught by Ishida for the purposes of being more effective.

Regarding claims 4, 6, and 9. Doi discloses a radio cell station apparatus in a mobile communication System (paragraph [0003], Doi teaches communication device and radio communication system made up of base station and mobile terminal), signals transmitted/received in said mobile communication system including already-known reference signals (paragraph [0058], Doi teaches the reference signal already used), comprising:

storage means (70) for storing a plurality of reference numbers different from each other (paragraph [0056], [0058], Doi teaches the storing reference signal); and

However, Doi does not disclose specifically reference signal allocation means (40) for allocating, when a connection request is received from a terminal device, a reference signal different from the reference signal stored in said storage means (70), nevertheless, Ishida teaches the limitations (paragraph [0086]-[0087], Ishida teaches storing information).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to specifically include reference signal allocation means (40) for allocating, when a connection request is received from a terminal device, a reference signal different from the reference signal stored in said storage means (70), as taught by Ishida for the purposes of being more effective.

Art Unit: 2617

However, Doi does not specifically disclose based on a cell station number assigned to each cell station and allocating the reference signal to said terminal device, nevertheless, Ishida teaches the limitation (paragraph [0031], Ishida teaches station number or word in this case UW). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to specifically include based on a cell station number assigned to each cell station and allocating the reference signal to said terminal device as taught by Ishida for the purposes of a more efficient way to assign link channels.

Consider claim 2. The radio cell station apparatus according to claim 1, the combination discloses wherein before the connection request is received from said terminal device, said search means (40) receives in advance a communication signal communicated between said neighboring cell station (paragraph [0029], Doi teaches communication signals) and a terminal device communicating with said neighboring cell station (paragraph [0058], Doi), and analyzes a reference signal in use from the received communication signal (paragraph [0032], Doi), and said storage means (70) stores and holds said analyzed reference signal (abstract, paragraph [0065], Ishida).

Consider claim 3. The radio cell station apparatus according to claim 2, the combination discloses wherein said search means (40) searches for the reference signal used in said neighboring cell station for each traffic slot allocated

Art Unit: 2617

to said terminal device (paragraph [0119], Doi teaches searches for a link or channel to mobile terminal).

Consider claims 5, 10, and 15. The radio cell station apparatus according to claim 4, the combination discloses wherein said reference signal allocation means (40) allocates (paragraph [0040], Doi teaches allocation of codes) an i -th reference signal corresponding to value i of a remainder of division of said cell station number by total number m of reference signals stored in said storage means (70), where m is a natural number and i is a natural number of at most m (paragraph [0109], Doi teaches a vector series and weight vectors used to calculate reference signals).

Consider claims 7 and 12. The reference signal allocation method according to claim 6, the combination discloses further comprising the steps of: before the connection request is received from said terminal device (abstract, title, fig. 5, paragraph [0032], Doi teaches the reference signal), receiving in advance a communication signal communicated between said neighboring cell station and a terminal device communicating with said neighboring cell station (fig. 9 and 10, Doi teaches radio base station paragraph [0155]), and analyzing a reference signal in use from the received communication signal; and storing said analyzed reference signal (paragraph [0056], [0058], Doi teaches the storing reference signal).

Art Unit: 2617

Consider claims 8 and 13. The reference signal allocation method according to claim 7, the combination discloses further comprising the step of searching for the reference signal used in said neighboring cell station for each traffic slot allocated to said terminal device (paragraph [0163], Doi teaches PHS slots).


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Diego Herrera whose telephone number is (571) 272-0907. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on (571) 272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Diego Herrera
Patent Examiner


GEORGE ENG
SUPERVISORY PATENT EXAMINER